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Triassic Life of the Connecticut Valley. By RICHARD SWANN LULL. Connecticut Geol. and Nat. Hist. Survey, Bull. 24.

The author interprets the environment, both physiographic and climatic, of Newark time in the Connecticut valley, and gives a full discussion of the animal life with descriptions and illustrations of both the fossils and the trails and footprints in these beds.

The remarkable thing about this fossil field is that actual fossils are exceedingly scarce but trails and footprints are found in marvelous abundance. In actual fossils the invertebrates are represented by only two species of *Unio* and a single aquatic insect species. The terrestrial vertebrate skeletons are all reptilian, consisting of only two species of phytosaurs, two of aëtosaurs, and five of theropod dinosaurs.

However, the trails and footprints indicate a much greater and more varied fauna. Of the invertebrates, annelids, insects, spiders, scorpions, and fresh-water crustaceans of great variety were doubtless present. The footprints represent two, possibly three, classes of terrestrial vertebrates—amphibia of salamandrine form and also stegocephalians; among the reptiles, lizards, turtles, and dinosaurs, and possibly, also, rhynchocephalians, phytosaurs, aëtosaurs, and theromorpha. There is no evidence that birds were present.

C. H. E.

The Cretaceous-Eocene Contact in the Atlantic and Gulf Coastal Plain. By L. W. Stephenson. Professional Paper, U.S. Geol. Survey, No. 90-J, 1915. "Shorter Contributions to General Geology, 1914." Pp. 155-81, pls. XI-XIX (including 2 maps), figs. 13-20 (including map).

"The Cretaceous deposits of the Atlantic and Gulf Coastal Plain are separated from the overlying Eocene and younger formations by an unconformity of regional extent"; the unconformity can be traced from New Jersey to the Rio Grande, and from there southward into Mexico.

After the Upper Cretaceous sediments were laid down, the sea withdrew to the south and east some distance beyond the present shore-line; the Lower Eocene beds were deposited on a nearly base-leveled surface.

The faunal changes that occurred between the deposition of the uppermost Cretaceous and the lowermost Eocene strata were very profound; out of 168 species representing 89 genera in the *Exogyra costata* zone, which includes the upper part of the Selma chalk (uppermost Cretaceous), 20 or more common genera and practically if not all of the

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species became extinct before the Midway group (lowermost Eocene) was deposited. Stephenson quotes T. W. Vaughan as follows: "The changes that took place in the marine animal life of the Atlantic and Gulf Coastal Plain during the time represented by the unconformity separating the Cretaceous and Eocene of this area are more striking than the changes that have taken place between earliest Midway time and the present day."

V. O. T.

The Stratigraphy of the Montana Group, with Special Reference to the Position and Age of the Judith River Formation in North-Central Montana. By C. F. Bowen. Professional Paper, U.S. Geol. Survey, No. 90-I, 1915. "Shorter Contributions to General Geology, 1914." Pp. 95-153, pl. 1.

The area treated in this report "lies east of the Big Snowy and Judith mountains and extends from Musselshell, on Musselshell River, to Judith, on Missouri River, Mont." The generalized section of the sedimentary rocks in ascending order is as follows: *Cretaceous*: Colorado shale (thickness not measured), Montana group (Eagle sandstone) (200–300 feet), Claggett formation (700 = feet), Judith River formation (250–500 feet), Bearpaw shale (1,100 = feet); and the *Eocene*(?) Lance formation (700–800 feet). There is no evidence of an unconformity at any horizon in this section.

It is concluded that "the evidence of the vertebrate fauna, so far as in the present state of knowledge it has any weight, and the evidence of the fresh- and brackish-water invertebrates, so far as it is decisive for accurate time determination, indicate a closer relationship between the Belly River [of Canada] and Judith River than between either of these formations and the Lance. This is in accord with the stratigraphic evidence, which shows conclusively that both the Judith River and Belly River formations are separated from the Lance by amarine formation which is of undoubted Cretaceous age."

V. O. T.

Statistics of the Mineral Production of Alabama for 1913. By Charles A. Abele. Geol. Surv. of Alabama, Bull. 15. University, 1914. Pp. 67.

A compilation from Mineral Resources of the United States.

A. D. B.